

FIG. 1

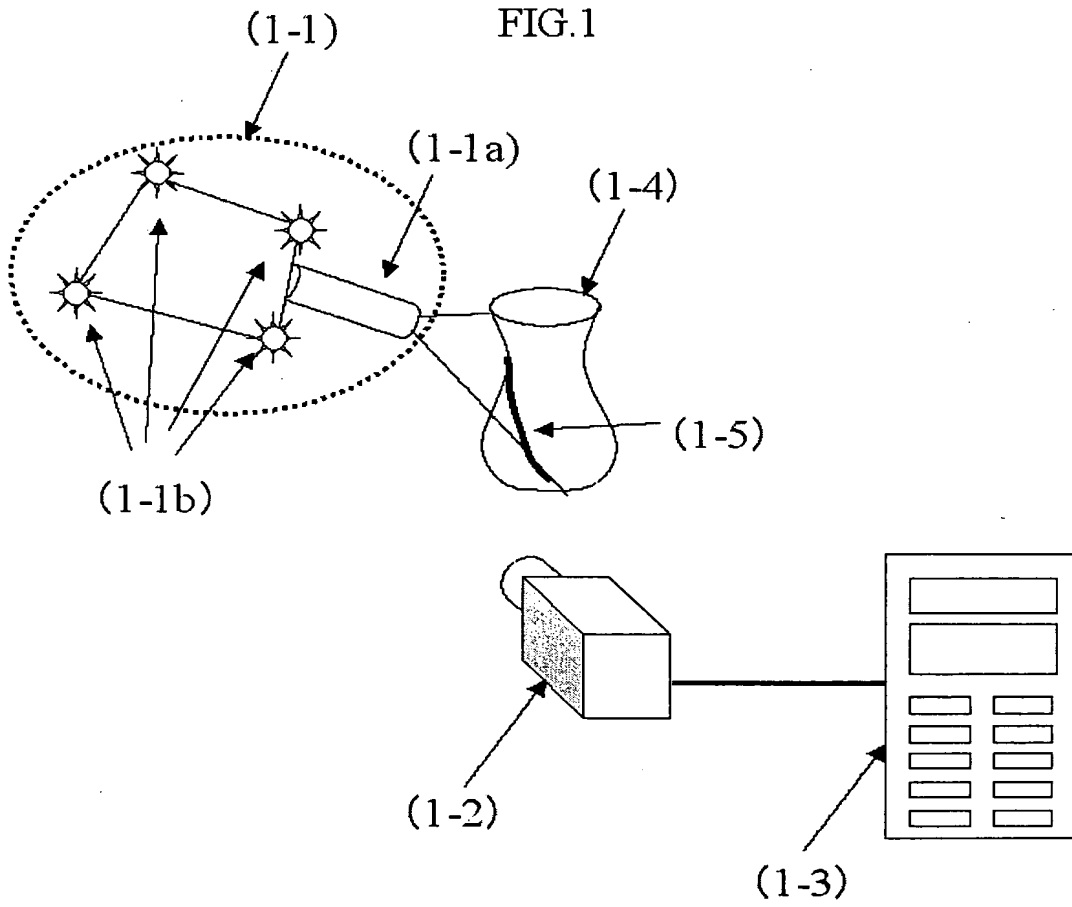


FIG.2

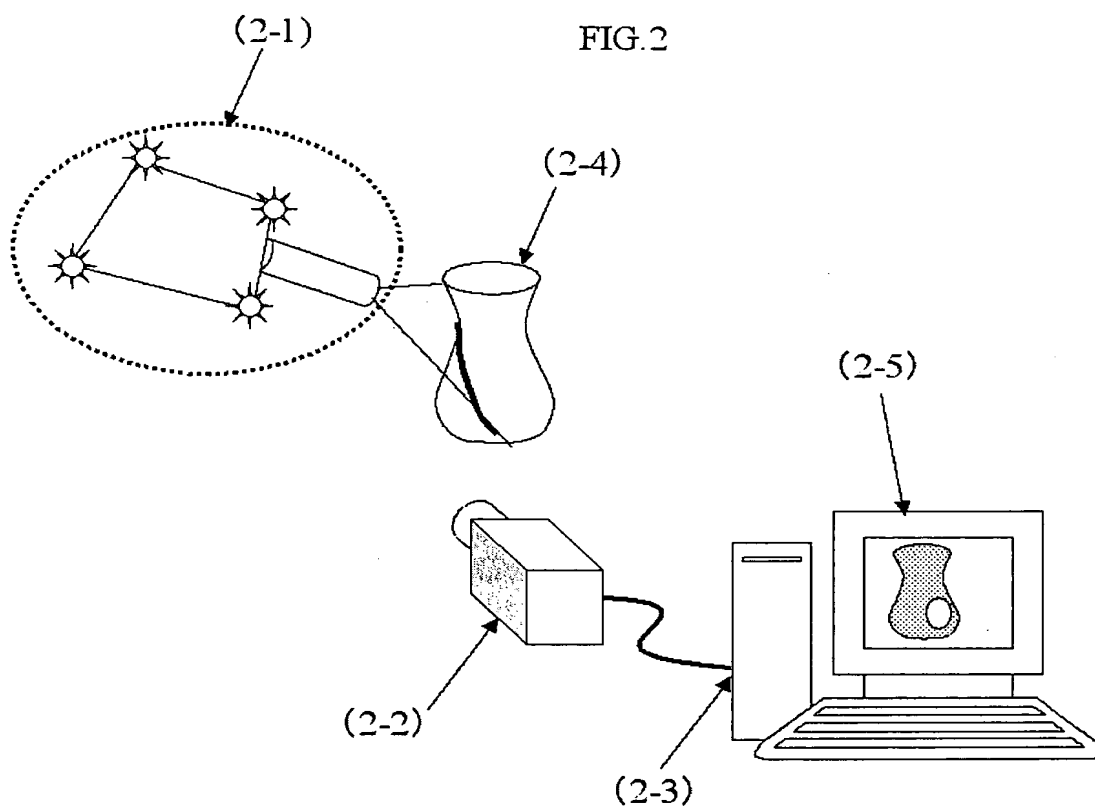


FIG.3

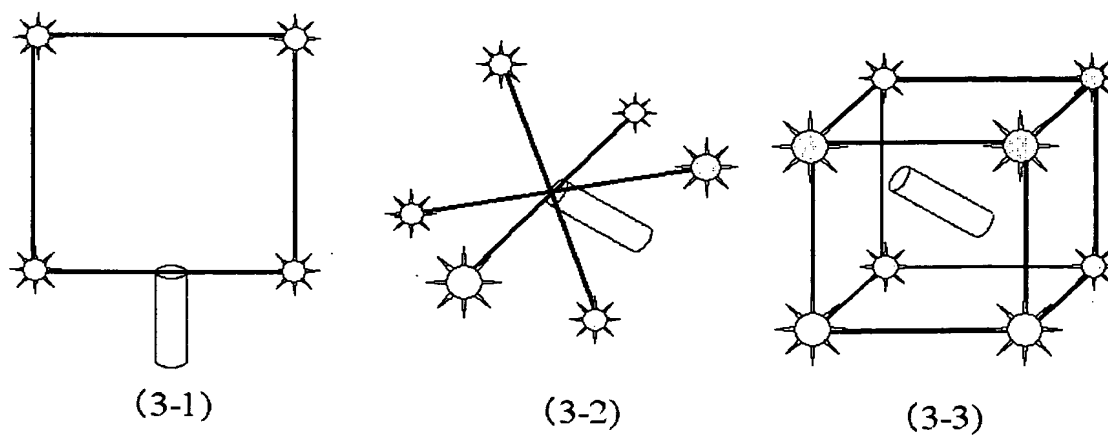


FIG. 4

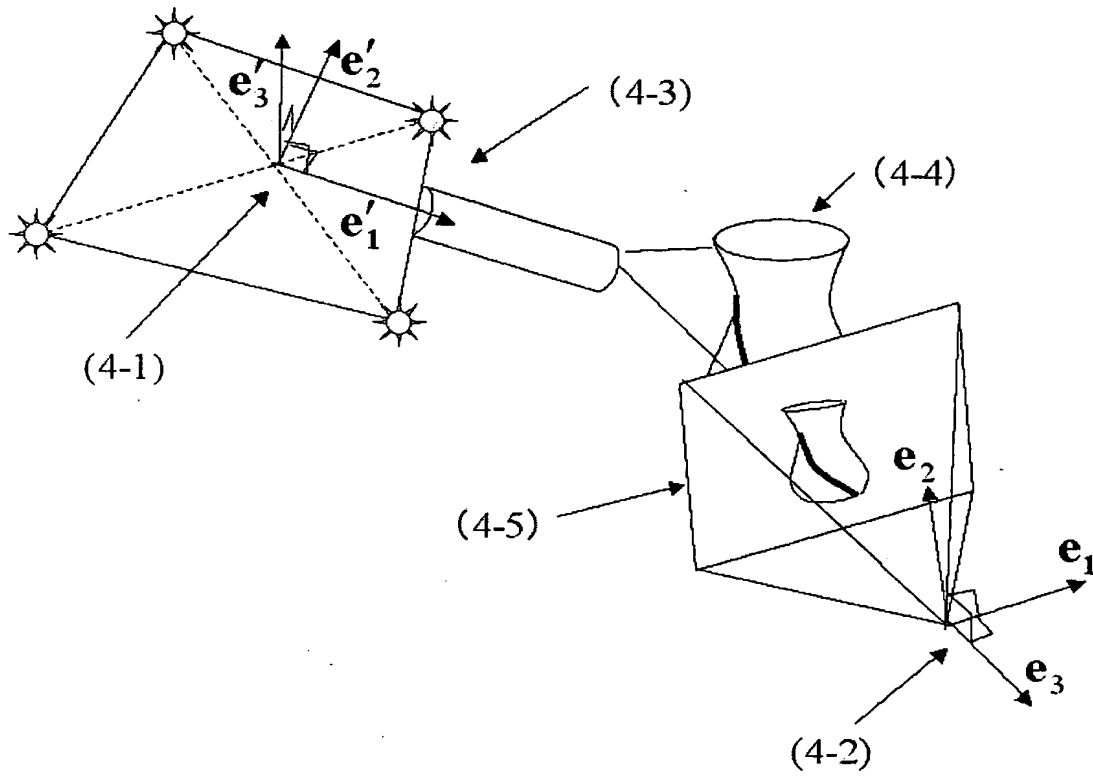


FIG. 5

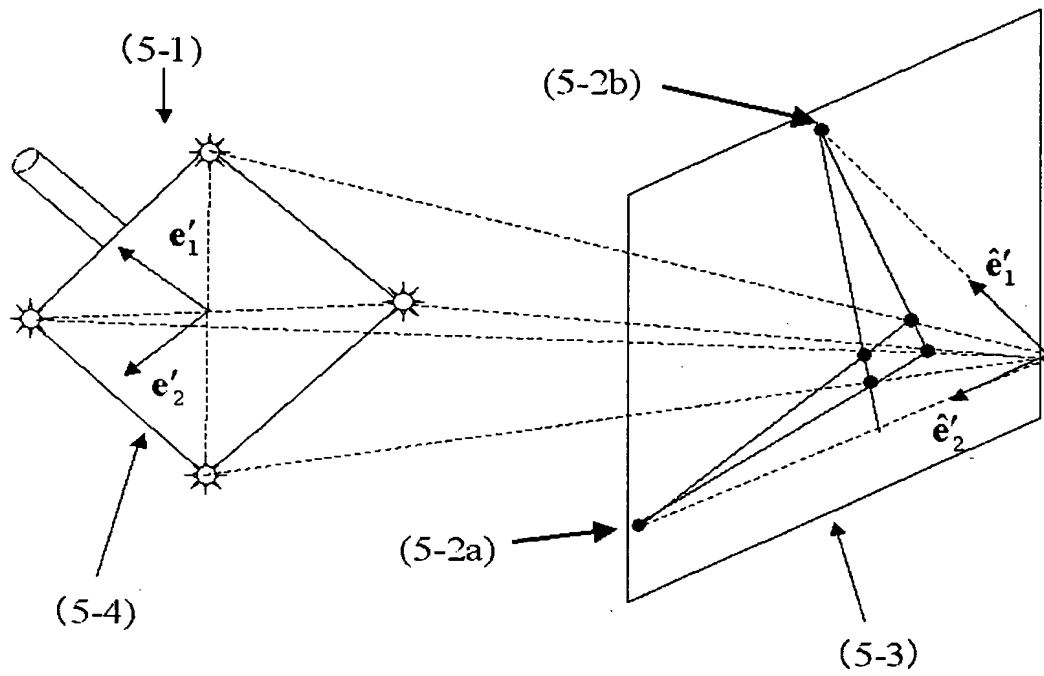


FIG. 6

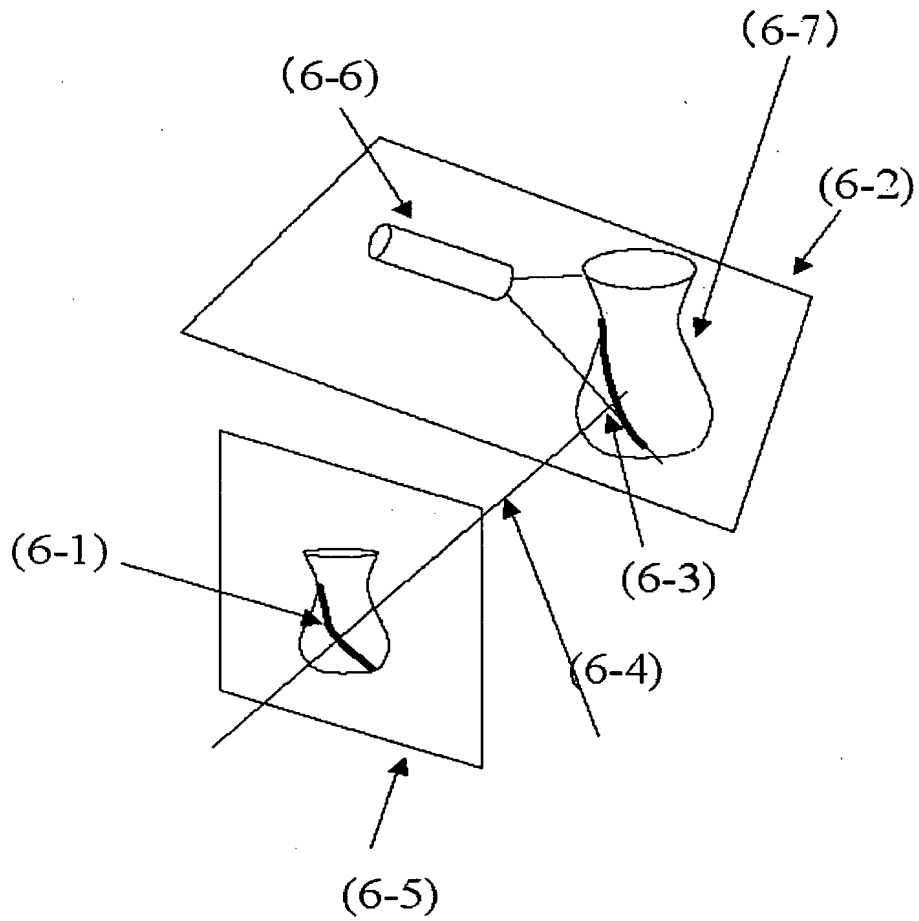
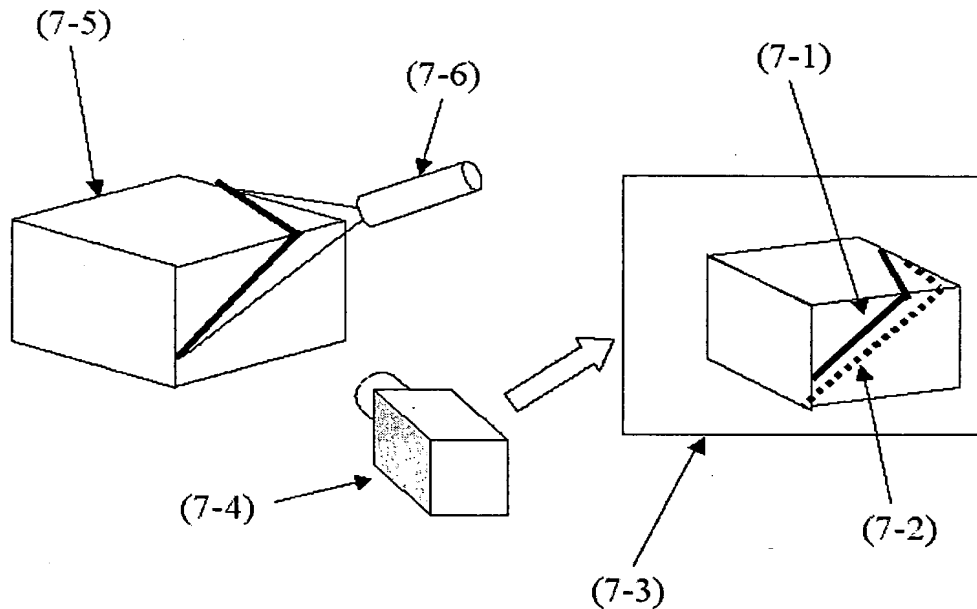


FIG. 7



Explanation of figures

1-1 3D Measurement device 1-1a line laser projector 1-1b LEDs

1-2 Image capturing device 1-3 Computer

1-4 Target object 1-5 Projected laser light

2-1 3D Measurement device 2-2 Image capturing device 2-3 Computer

2-4 Target object 2-5 Display device

3-1 Squared shape 3-2 x,y,z coordinate shape 3-3 Cube shape

4-1 marker coordinate system 4-2 camera coordinate system 4-3 3D Measurement device

4-4 Target object 4-5 Image plane

5-1 3D Measurement device 5-2a VP 5-2 b VP 5-3 Image plane

5-4 Marker plane

6-1 Detected pixel on image 6-2 Estimated laser plane

6-3 Estimated 3D point

6-4 The line going through the origin of the camera coordinates and the surface point

6-5 Image plane 6-6 3D Measurement device 6-7 Target object